**Course:** Introduction to Computers  **Program:** MSMC

**Semester:** 4th **Total Marks:** 30

**Instructor:** Zakir Rahim **Time**: 4 Hours

Due Date: 21 August, 2020

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**Instructions:**

* Students are required to solve the provided assignment and upload it on SIC within specified time.
* The solutions must be type-written.
* The solutions must be uploaded either in Ms-Word format or pdf format.
* Students are required to save the file with their name and student id. For example ahmad\_12345.

Q1. (a) In your opinion what are the 3 most important characteristics of computers, Explain each characteristic? (5)

(b) Write key characteristics of fourth generation of computers? (5)

Q2. (a)Discuss the importance of Arithmetic logic unit and Control unit of a computer system? (5)

(b)Write a detailed note on importance of RAM (Random Access Memory)? (5)

Q3. Write a detailed note on Basic Organization of a computer System along with the functions of each part. (10)

ANSWER: 1)

 1) **Diligence**: Computer is free from monotony, tiredness, and lack of concentration. It can continuously work for hours without creating any error and without grumbling.

2) **Versatility**: Computer Is capable of performing almost any task, if the task can be reduced to a finite series of logical steps.

3) **Power Of Remembering**: Computer can store and amount of information because of its secondary storage capability. It forgets or looses certain information only when it is asked to do so.

PART B)

1. The fourth generation computers have microprocessor-based systems. It uses VLSI (Very Large Scale Integrated) circuits.

  2) They are the cheapest among all the computer generation.

 3) The speed, accuracy and reliability of the computers were improved in fourth generation computers.

   4) Many high-level languages were developed in the fourth generation such as COBOL, FORTRAN, BASIC, PASCAL and C language.

  5) A Further refinement of input/output devices was developed.

6) Networking between the systems was developed in fourth generation computer.

ANSWER: 2)

 ARTHIMETIC LOGIC: Arithmetic Logic Unit of a computer system is the place where the actual executions of instructions takes place during processing operation.

 Most of the operations of a CPU are performed by one or more ALUs, which load data from input registers. A register is a small amount of storage available as part of a CPU. The control unit tells the ALU what operation to perform on that data, and the ALU stores the result in an output register. The control unit moves the data between these registers, the ALU, and memory.

CONTROL UNIT:

 Control Unit of a computer system manages and coordinate the operations of all other components of the computer system.

 The control unit (CU) is a component of a computer's central processing unit (CPU) that directs the flow of data between the CPU and the other devices. It tells the computer's memory, arithmetic and logic unit and input and output devices how to respond to the instructions that have been sent to the processor.

PART B)

 Random access memory (RAM) is a type of data storage used in computers that is generally located on the motherboard. This type of memory is volatile and all information that was stored in RAM is lost when the computer is turned off. Volatile memory is temporary memory while ROM (read-only memory) is non-volatile and holds data permanently when the power is turned off.

The RAM chip may be individually mounted on the motherboard or in sets of several chips on a small board connected to the motherboard. Older memory types were in the form of chips called dual in-line package (DIP). Although DIP chips are still used today, the majority of memory is in the form of a module, a narrow printed circuit board attached to a connector on the motherboard. The three main memory circuit boards types containing chips are: RIMMs (Rambus in-line memory modules), DIMMs (dual in-line memory modules) and SIMMs (single in-line memory modules). Most motherboards today use DIMMs.

ANSWER: 3)

 **Basic organization of computer system**

1. central processing unit
2. Arithmetic and logic unit
3. input unit
4. output unit

**Explanation:**

**CPU :**CPU is a**brain**of computer. It controls the computer system. It converts data to information.

**ALU :**This is a part of CPU. It consists of two units. one is arithmetic unit and another one is logic unit. Arithmetic and logical operation are performed in this part.

**Input and Output unit :**This unit controls input and output devices. input devices are keyboard, mouse etc.. and output devices are printer, monitor, plotter, etc.